


FEMCard analysis result

20.10.15


Project data	
Projectname	large_strain_viscoelasticity_compressible
Folder	F:\tmp_del\Demo_Projects\A_isotropic_material\E_viscoelasticity_large_strain\compressible
Created at	18.09.2015
Maker	Parsolve GmbH
Comment	Synthetic measurement data
Material model	ISOTR LARGE strain OGDEN VISCOelasticity, N=1, 4 relax. modules, MEAS=true

Test informations


Test 1

Color	
Number	1
Name	fast_uniax
Folder	F:\tmp_del\Demo_Projects\A_isotropic_material\E_viscoelasticity_large_strain\compressible\fast\Viscoel
Load type	Isotropic time-dependent LARGE strain UNIAXIAL axial true (Cauchy) stress vs. axial and
Weight T	2.27854

Test 2

Color	
Number	2
Name	med_uniax
Folder	F:\tmp_del\Demo_Projects\A_isotropic_material\E_viscoelasticity_large_strain\compressible\med\Viscoe
Load type	Isotropic time-dependent LARGE strain UNIAXIAL axial true (Cauchy) stress vs. axial and
Weight T	1.00196

Test 3

Color	
Number	3
Name	slow_uniax
Folder	F:\tmp_del\Demo_Projects\A_isotropic_material\E_viscoelasticity_large_strain\compressible\slow\Viscoe
Load type	Isotropic time-dependent LARGE strain UNIAXIAL axial true (Cauchy) stress vs. axial and
Weight T	1

Tests weight TR

Test 1		
Start	End	Value
0	29	8.43
30	59	2.89

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60	90	1.79
91	120	1.4
121	150	1.16
151	180	1

Test 2		
Start	End	Value
0	50	3.12
51	100	1.24
101	125	1.96
126	150	1.96
151	200	1
201	250	1

Test 3		
Start	End	Value
0	50	3.12
51	100	1.24
101	125	1.96
126	150	1.96
151	200	1
201	250	1

Tests weight SD

Test 1	
Strain direction	Value
le_exp^xx	1
le_exp^yy	3.41

Test 2	
Strain direction	Value
le_exp^xx	1
le_exp^yy	3.15

Test 3	
Strain direction	Value
le_exp^xx	1
le_exp^yy	3.12

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Model parameter					
Parameter	Fix	Lower limit	Upper limit	Start value	Result
mu1		0.5	10	2	1.3
alpha1		0.5	10	1	2.399998
D1		1e-08	2	0.1	0.7000003
g_1		0.001	0.8	0.2	0.4600015
k_1		0.001	0.8	0.1	0.2800011
tau_1		0.001	5	1	0.4000031
g_2		0.001	0.7	0.1	0.1300106
k_2		0.001	0.7	0.05	0.1700153
tau_2		1	20	10	8.700886
g_3		0.001	0.4	0.05	0.02995609
k_3		0.001	0.4	0.02	0.01995871
tau_3		10	500	100	89.93463
g_4		0.001	0.2	0.02	0.01995546
k_4		0.001	0.2	0.01	0.009969905
tau_4		500	2000	1000	691.4621

Processing parameter	
Max. number of steps	200
LM start value	0.1
Max. error sum of squares	1e-05

Processing results	
Steps	8
Least squares sum	2.83935e-07

Correlation matrix												
	mu1	alpha1	D1	g_1	k_1	tau_1	g_2	k_2	tau_2	g_3	k_3	tau_3
mu1	1	-0.796	-0.211	-0.188	-0.0359	-0.354	0.0371	0.0115	-0.102	-0.00489	0.0153	-0.0395
alpha1	-0.796	1	0.0429	-0.0549	-0.0655	-0.134	0.0645	-0.0143	-0.114	-0.00536	0.038	-0.0313
D1	-0.211	0.0429	1	0.0603	-0.385	0.188	-0.0621	0.183	0.0311	0.0025	-0.0836	0.000365
g_1	-0.188	-0.0549	0.0603	1	0.482	0.748	-0.101	0.0232	0.809	0.0507	-0.163	0.338
k_1	-0.0359	-0.0655	-0.385	0.482	1	0.321	0.0997	-0.624	0.5	0.0264	0.256	0.243
tau_1	-0.354	-0.134	0.188	0.748	0.321	1	-0.213	-0.00328	0.552	0.0271	-0.125	0.197
g_2	0.0371	0.0645	-0.0621	-0.101	0.0997	-0.213	1	0.289	0.445	0.333	0.0681	0.734
k_2	0.0115	-0.0143	0.183	0.0232	-0.624	-0.00328	0.289	1	0.164	0.172	-0.649	0.289

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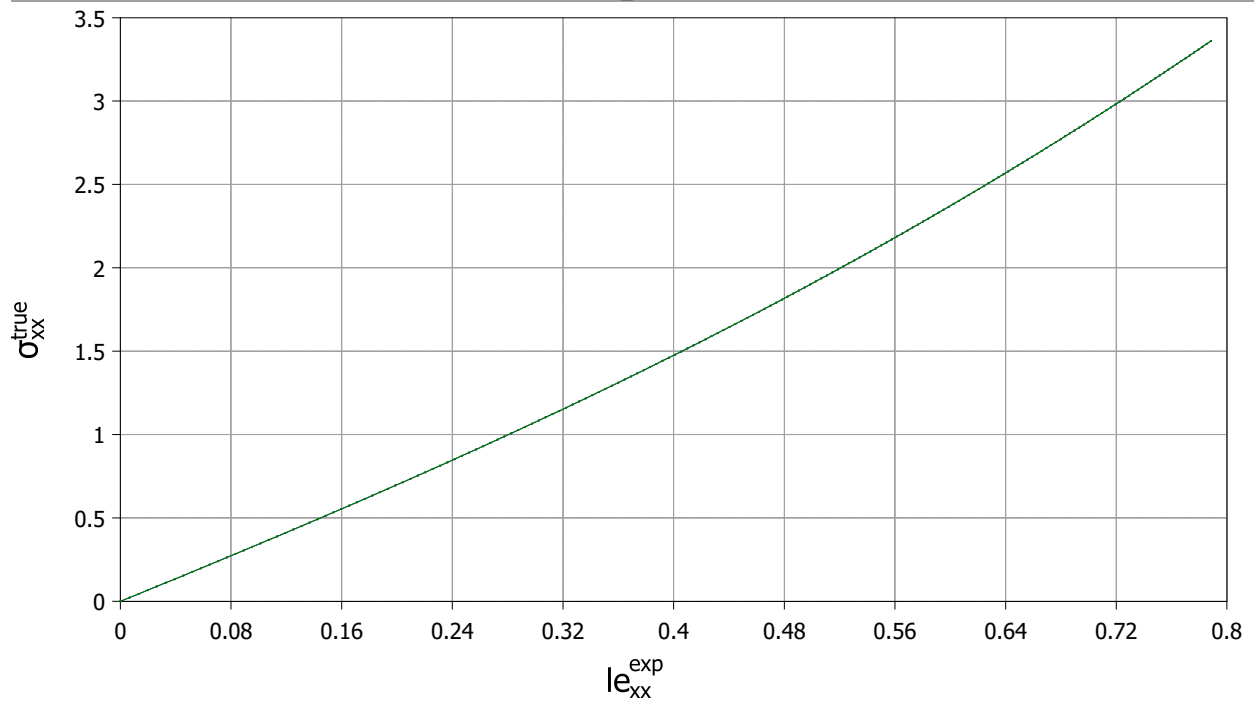
tau_2	-0.102	-0.114	0.0311	0.809	0.5	0.552	0.445	0.164	1	0.169	-0.137	0.653	-0.324
g_3	-0.00489	-0.00536	0.0025	0.0507	0.0264	0.0271	0.333	0.172	0.169	1	0.374	0.767	
k_3	0.0153	0.038	-0.0836	-0.163	0.256	-0.125	0.0681	-0.649	-0.137	0.374	1	0.175	
tau_3	-0.0395	-0.0313	0.000365	0.338	0.243	0.197	0.734	0.289	0.653	0.767	0.175	1	
g_4	0.0199	0.0132	-0.00143	-0.168	-0.111	-0.0963	-0.362	-0.162	-0.324	-0.121	0.0672	-0.406	
k_4	-0.00288	-0.0182	0.0603	0.0419	-0.228	0.0428	-0.115	0.46	-0.0123	-0.0888	-0.807	-0.108	
tau_4	-0.0214	-0.0165	0.000269	0.185	0.132	0.106	0.494	0.204	0.386	0.942	0.323	0.863	
g_4	k_4	tau_4											
0.0199	-0.00288	-0.0214											
0.0132	-0.0182	-0.0165											
-0.00143	0.0603	0.000269											
-0.168	0.0419	0.185											
-0.111	-0.228	0.132											
-0.0963	0.0428	0.106											
-0.362	-0.115	0.494											
-0.162	0.46	0.204											
-0.324	-0.0123	0.386											
-0.121	-0.0888	0.942											
0.0672	-0.807	0.323											
-0.406	-0.108	0.863											
1	0.139	-0.014											
0.139	1	-0.0702											
-0.014	-0.0702	1											

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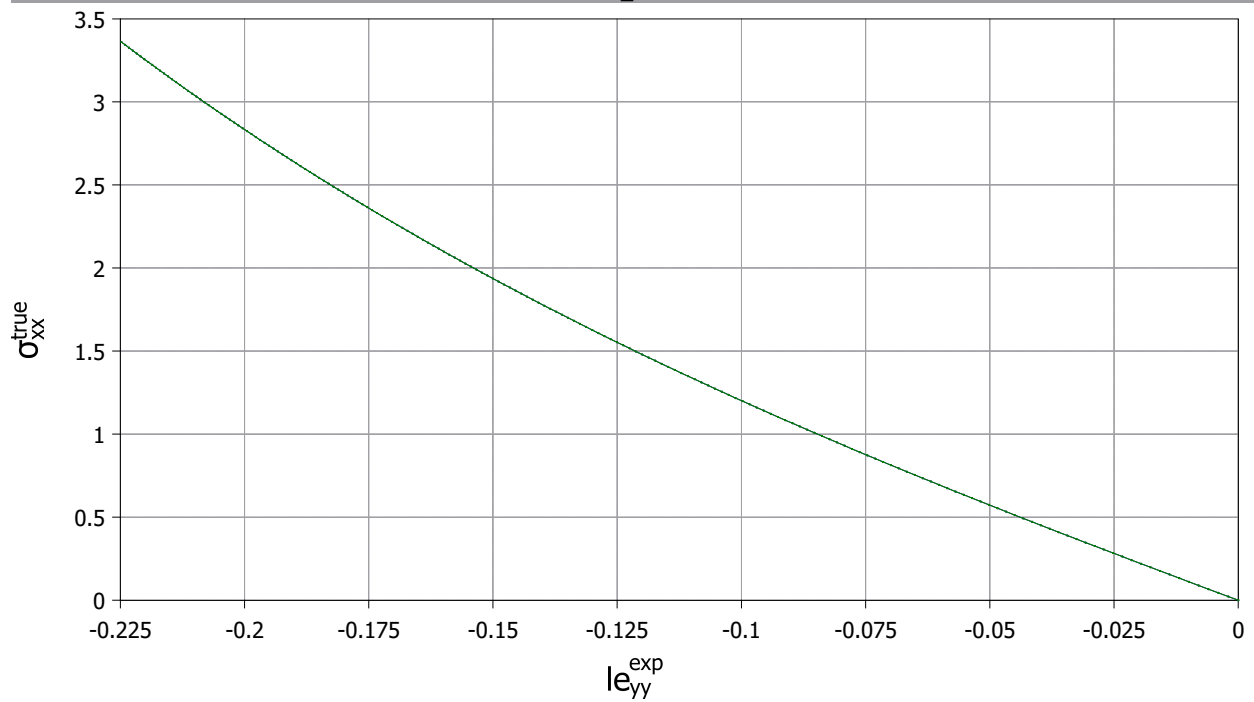
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Verification

fast_uniax

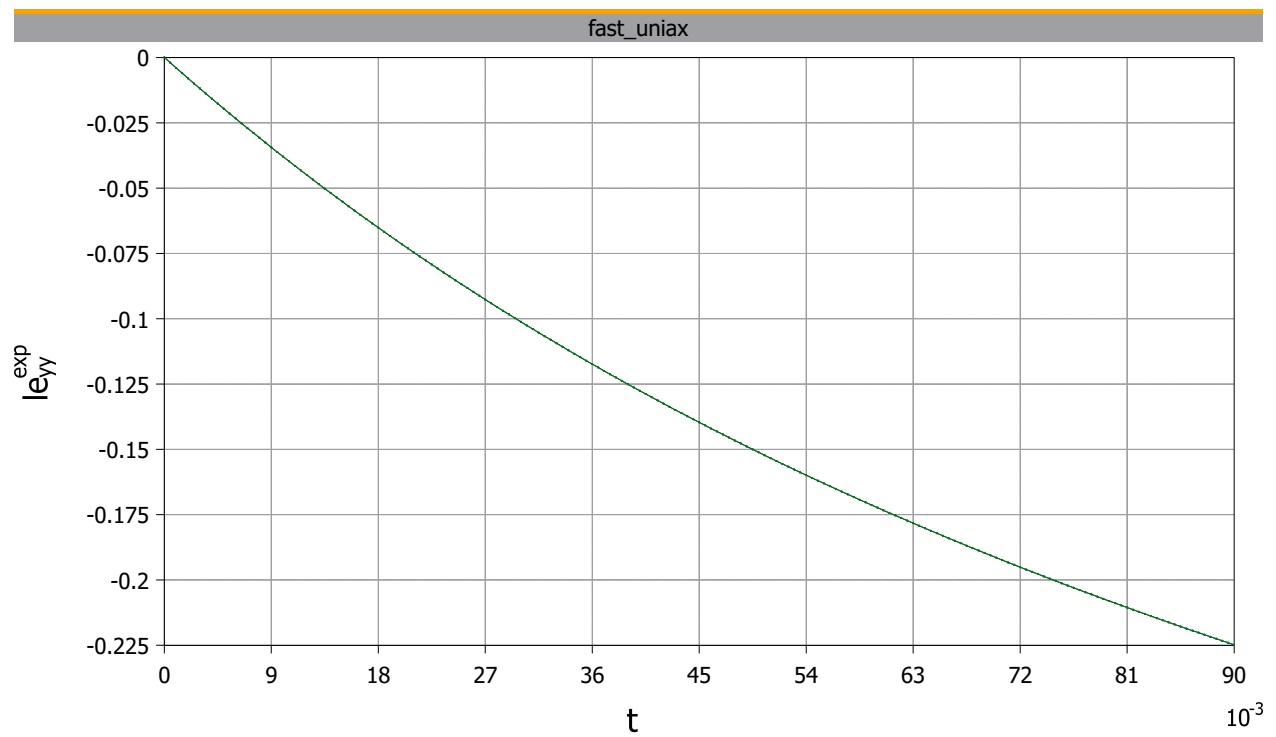
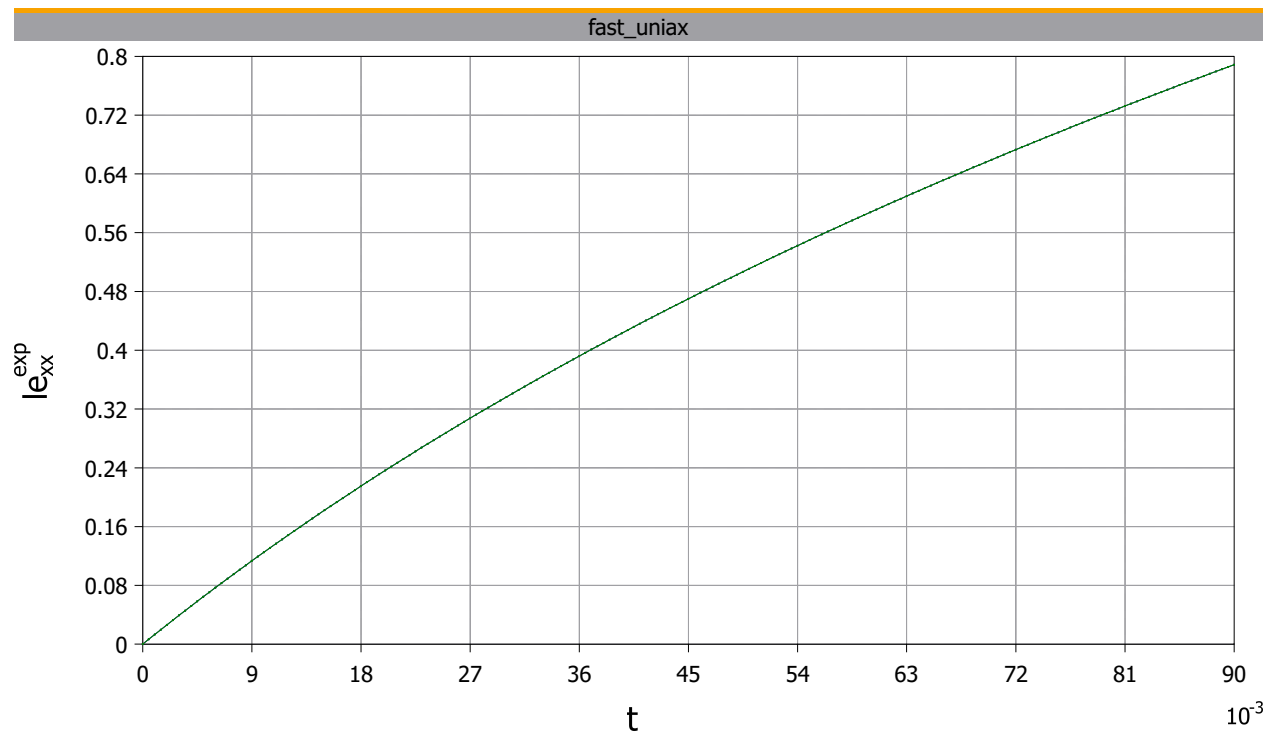


fast_uniax



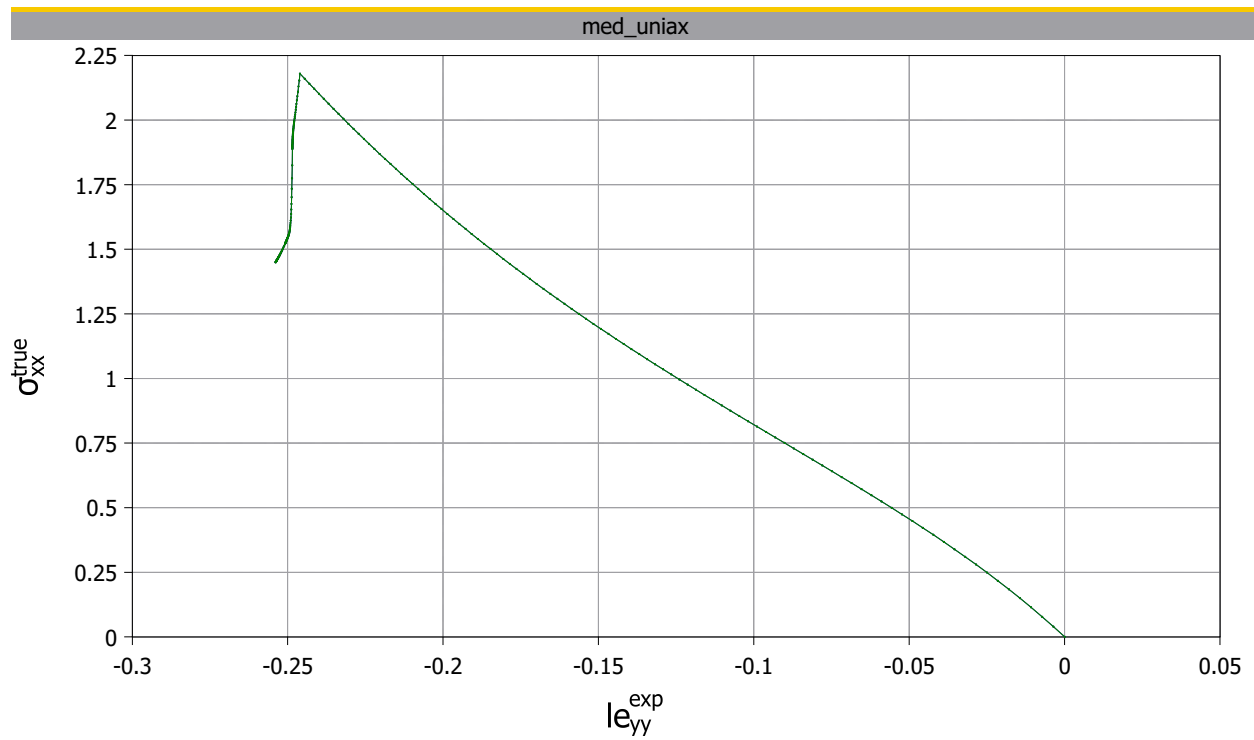
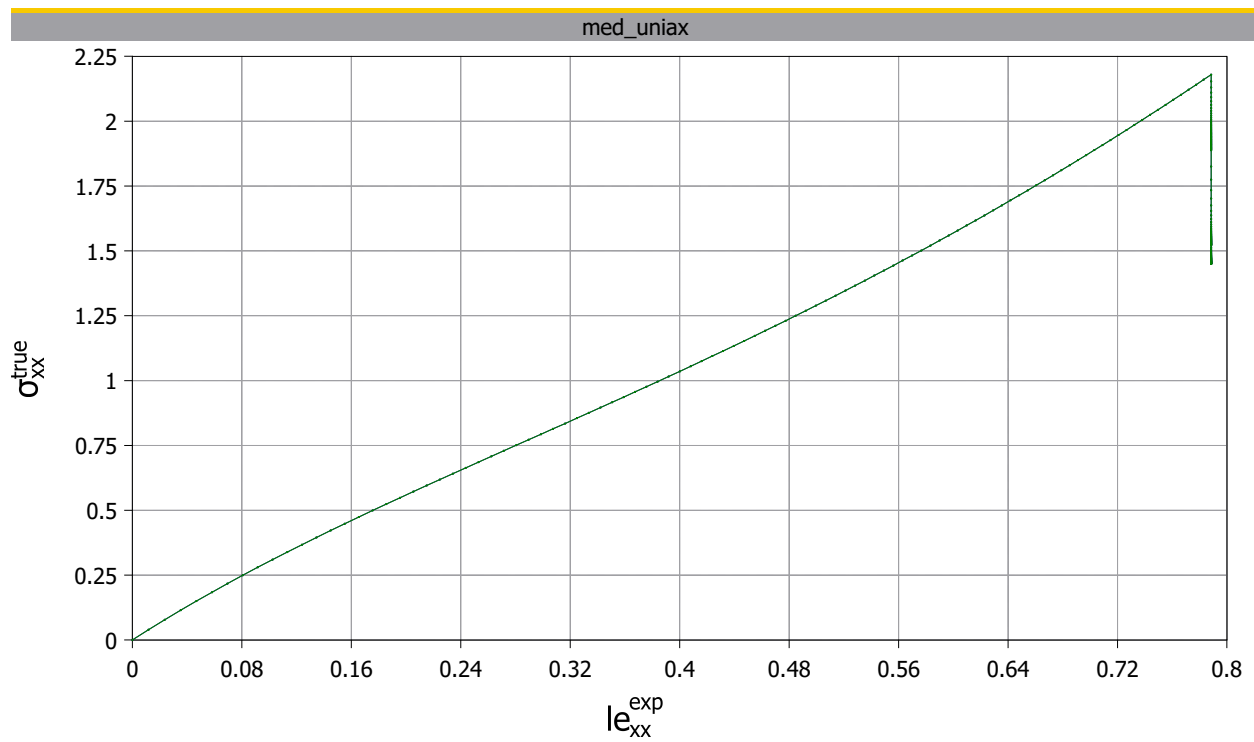
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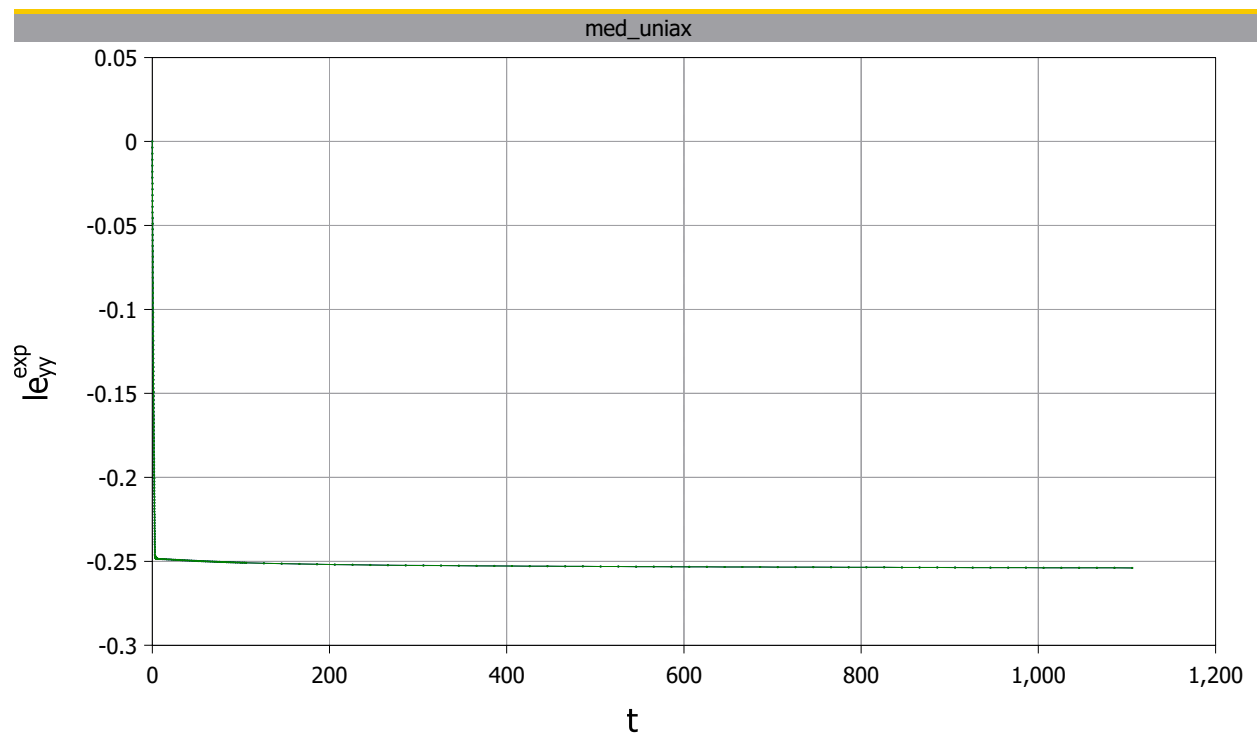
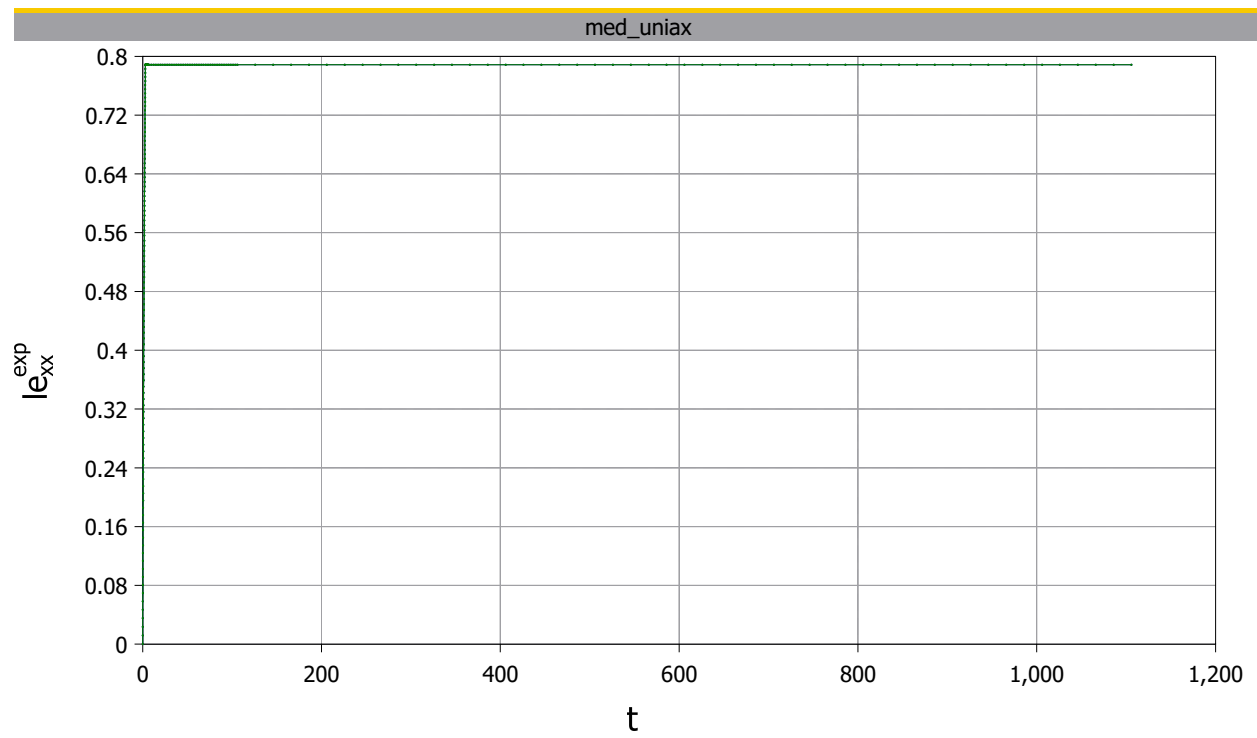
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